Complete Summary

GUIDELINE TITLE

Best evidence statement (BESt). Waste blood volume - undiluted specimens from adult patients with a saline well.

BIBLIOGRAPHIC SOURCE(S)

Cincinnati Children's Hospital Medical Center. Best evidence statement (BESt). Waste blood volume - undiluted specimens from adult patients with a saline well. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2009 Mar 3. 5 p. [4 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Conditions requiring intravenous saline well catheters

GUIDELINE CATEGORY

Assessment of Therapeutic Effectiveness
Evaluation

CLINICAL SPECIALTY

Critical Care
Emergency Medicine

Family Practice
Internal Medicine

INTENDED USERS

Advanced Practice Nurses
Clinical Laboratory Personnel
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To evaluate how much waste should be drawn from an intravenous saline well catheter to obtain a subsequent undiluted blood sample

TARGET POPULATION

Adult patients with intravenous saline well catheters who need lab specimens obtained

INTERVENTIONS AND PRACTICES CONSIDERED

Waste blood drawn from an intravenous saline well catheter

MAJOR OUTCOMES CONSIDERED

Serum sodium levels

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Search Strategy

- **OVID Databases**
  Medline, CINAHL, and Cochrane Databases for Systematic Reviews
- **PubMed Databases**
  Clinical Queries for Systematic Review
- **Scopus Databases**
  Clinical Queries for Systematic Review
- **Filters**:
  Publication Date: 1980 to present
  Limits: humans and English language

- **Search Terms:** "intravenous catheter", "IV catheter", "indwelling catheter", "blood", "blood sample", "waste", "volume", "dilution", "blood specimen", "catheter", "sample dilution", "specimen dilution", and "saline well"

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Table of Evidence Levels

Quality Level	Definition
1a† or 1b†	Systematic review, meta-analysis, or meta-synthesis of multiple studies
2a or 2b	Best study design for domain
3a or 3b	Fair study design for domain
4a or 4b	Weak study design for domain
5	Other: general review, expert opinion, case report, consensus report, or guideline

†a = good quality study; b = lesser quality study

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Table of Recommendation Strength

Strength	Definition
"Strongly recommended"	There is consensus that benefits clearly outweigh risks and burdens (or vice versa for negative recommendations).
"Recommended"	There is consensus that benefits are closely balanced with risks and burdens.
No recommendation made	There is a lack of consensus to direct development of a recommendation.
Dimensions: In determining the strength of a recommendation, the development group makes a considered judgment in a consensus process that incorporates critically appraised evidence, clinical experience, and other dimensions as listed below.	
1. Grade of the Body of Evidence 2. Safety/Harm 3. Health benefit to the patients (direct benefit) 4. Burden to patient of adherence to recommendation (cost, hassle, discomfort, pain, motivation, ability to adhere, time) 5. Cost-effectiveness to healthcare system (balance of cost/savings of resources, staff time, and supplies based on published studies or onsite analysis) 6. Directness (the extent to which the body of evidence directly answers the clinical question [population/problem, intervention, comparison, outcome]) 7. Impact on morbidity/mortality or quality of life	

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The strength of the recommendation (strongly recommended, recommended, or no recommendation) and the quality of the evidence (1a–5) are defined at the end of the "Major Recommendations" field.

1. There is insufficient evidence and lack of consensus to make a recommendation on the minimum amount of blood wastage needed to permit effective samples in adult patients. (Davies, Mehr, & Morley, 2000 [4b]; Herr et al, 1990 [4a]; Yucha & DeAngelo, 1996 [4a]; Zlotowski, Kupas, & Wood, 2001 [4a])
2. It is recommended that a research study be conducted to determine the minimum amount of blood wastage needed to permit effective undiluted blood specimen (renal panel) to add to the body of knowledge on this topic.

There is no current Saline Well Policy at Cincinnati Children's Hospital Medical Center (CCHMC).

Definitions:

Table of Evidence Levels

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	pain, motivation, ability to adhere, time) 5. Cost-effectiveness to healthcare system (balance of cost/savings of resources, staff time, and supplies based on published studies or onsite analysis) 6. Directness (the extent to which the body of evidence directly answers the clinical question [population/problem, intervention, comparison, outcome]) 7. Impact on morbidity/mortality or quality of life

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence is classified for each recommendation (see "Major Recommendations")

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Identifying the minimum amount of waste required prior to obtaining a blood specimen from a saline well could result in a smaller amount of unnecessary wasted blood being removed.

POTENTIAL HARMS

Discomfort associated with intravenous (IV) insertion, risk of bruising, and risk of infection.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This Best Evidence Statement addresses only key points of care for the target population; it is not intended to be a comprehensive practice guideline. These recommendations result from review of literature and practices current at the time of their formulation. This Best Evidence Statement does not preclude using care modalities proven efficacious in studies published subsequent to the current revision of this document. This document is not intended to impose standards of care preventing selective variances from the recommendations to meet the

specific and unique requirements of individual patients. Adherence to this Statement is voluntary. The clinician in light of the individual circumstances presented by the patient must make the ultimate judgment regarding the priority of any specific procedure.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2009 Mar 3

GUIDELINE DEVELOPER(S)

Cincinnati Children's Hospital Medical Center - Hospital/Medical Center

SOURCE(S) OF FUNDING

Cincinnati Children's Hospital Medical Center

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Group/Team Members: Michelle Lawrence (*Team Leader)*,Â RNIII, MSN, A3S; Rachel Baker, RN, PhD Research Nurse II, A3S; Suzanne Summer, RD, MS Bionutritionist, CRC; Amy Shova, BS Clinical Research Coordinator II, CRC; Cathy McGraw, BA Application Specialist III, CRC

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All team members have signed a conflict of interest declaration and none were found.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Cincinnati Children's Hospital Medical Center.

Print copies: For information regarding the full-text guideline, print copies, or evidence-based practice support services contact the Children's Hospital Medical Center Health Policy and Clinical Effectiveness Department at HPCEInfo@chmcc.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Judging the strength of a recommendation. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2008 Jan. 1 p.
- Grading a body of evidence to answer a clinical question. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 1 p.
- Table of evidence levels. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2008 Feb 29. 1 p.

Print copies: For information regarding the full-text guideline, print copies, or evidence-based practice support services contact the Children's Hospital Medical Center Health Policy and Clinical Effectiveness Department at HPCEInfo@chmcc.org.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI InstituteÂ on October 1, 2009.

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Date Modified: 11/23/2009